

CURRICULUM CONNECTIONS

Mister C Live! Air Is Everywhere



Support for the Student Enrichment Through the Arts program has been provided by



Frederick A. DeLuca
FOUNDATION

and the following Funds at the



Mildred H. Fagen Charitable Fund • Leonard & Sally Robbins Fund • Mary and Alex Mackenzie Community Impact Fund
The Frederick A. DeLuca Foundation Broward Community Fund

What's included in Curriculum Connections:



A Letter to Teachers

Theater Etiquette

Pre and Post Show Worksheets and Activities

Student to Family Cooperative Activity Ideas

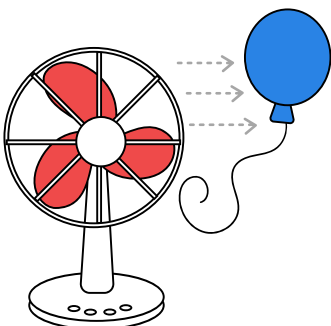
Florida Standards Alignments

Student Theater Review

Know Before you Go:

- Arrive at the theater 15 to 20 minutes before show time. Allow extra time for Broward County traffic. We are unable to start a show late.
- Please stay on the bus until greeted by a SEAS usher. At that time, please give the usher your BUS document and the usher will escort you to the theater.
- Remember to watch our Know Before You Go Video:

<https://tinyurl.com/ElementarySeasWelcome>





Theater Etiquette

There is so much that goes into creating a show for the stage. Behind the scenes, there are people who control the lights and the sound, the sets and the props. There are directors, writers, producers, musicians, and choreographers. So many people work together to create the performance you and everyone in the audience watches.

It is helpful to remind students of appropriate audience etiquette by explaining and discussing WHY these rules of behavior are important:

- Restroom visits are best made prior to the performance.
- Listen carefully to the ushers and your teachers. This gets everyone to your seats quickly and ensures a pleasant experience.
- Turn watches and cell phones to silent.
- Walk single file, hold hand rails as you use the steps for your safety.
- Listen carefully to each performer. They are working hard to entertain and inform with lots of clues about the story.
- Refrain from TALKING. This allows everyone to enjoy the show without distraction. Sometimes we think that if we whisper it is okay. But, if everyone in the audience whispers, it becomes disruptive.
- Laugh if something is funny, but not too loudly, you don't want to miss any dialogue.
- Photography and recording are not permitted.
- Pay attention to the lighting, scenery, costumes and music. All of these elements help provide more details to tell the story in an interesting way.
- Applaud (clap) and laugh at the right moments. This shows the performers that you respect and appreciate their work.

Dear Educators,



We are excited to present this Curriculum Connection (Study Guide) as a valuable resource to support your teaching journey. This guide has been carefully designed to offer engaging and meaningful activities for use in your classroom before and after seeing a S.E.A.S. performance at The Broward Center's Amaturro Theater, The Parker, or Miniaci at NSU. Each section is structured to make it easier for you to integrate cross-curricular connections, providing a seamless experience for students to deepen their understanding while exploring the creative process. This special resource was created in collaboration with the Broward Center's Curriculum Connections and includes content from the Mister C Live! Air Is Everywhere Resource Guide.

The activities and lessons in this guide have been intentionally crafted to complement Florida's B.E.S.T. standards. We encourage you to adapt the materials to best fit your classroom's needs and objectives, empowering students to think critically and creatively across all disciplines.

We want to take a moment to express our sincere appreciation for the passion and dedication you bring to your classrooms every day. Your commitment to infusing art-full moments into education not only enriches your students' learning experiences but also ignites their curiosity and creativity. Thank you for inspiring the next generation of thinkers, creators, and innovators. We are truly grateful for the impact you have on your students' lives. Consider joining the Teacher's Lounge (QR code below) to be notified of special events and discounts just for Teachers.

Don't forget to distribute your S.E.A.S. stickers when you return to school (after the trip) and share the magic that is Student Enrichment Through the Arts!



Teacher's Lounge



Mister C



Conceived & Performed by Kevin Cornell

Mister C Live

Air is Everywhere - Resource Guide



Online media to support
each activity sheet



Engage, Embrace and
Extend STEAM Learning



Easy to complete activities
for everyone to enjoy



Mister C

ABOUT THE SHOW

Are you ready for some hair-raising science, toe-tapping music and mind-blowing media? Join Mister C for another fun day of learning together in the lab as we learn and explore air! Mister C is no stranger to finding exciting and engaging ways to explore STEAM (Science, Technology, Engi-neering, Art, and Math) in our everyday lives. Mister C Live will have everyone singing, dancing and learning to the tune of science. Students and teachers will be amazed with this fun and educational series as Mister C uses humor, media and the engi-neering design process to make the ordinary extraor-dinary!

WHO IS MISTER C?

Mister C is not your ordinary educator! As a 20 year education veteran, Mister C has spent time as a classroom teacher, principal, curriculum specialist and district administrator. His specialty is knowing how to inspire and engage learners of all ages using video, music and live presentations.

Mister C is an Emmy award winning host and producer for DIY Science Time, which airs on PBS Stations across the US. He is also the creator of the YouTube channel LearningScienceisFun with 106,000 subscribers. Through these platforms, millions of learners have had the opportunity to enjoy learning to a different beat with silly songs, exciting experiments and dazzling demonstrations.

Whether online, on-air or live on stage, Mister C's high energy and infectious attitude will have you out of your seats, having fun learning together!



TEACHER FOCUSED

Activities designed to kickstart critical thinking and minds-on learning.



STUDENT-DRIVEN

Fun activities to introduce students to STEAM Learning.



EDUCATOR CREATED

Mister C created these learning experiences to foster critical thinking and a love for learning.



SHARE YOUR LEARNING

Snap a photo and share it online. Use #MisterCFullSTEAMAhead



@originalmisterc



@learningscienceisfun





Mister C

Pre-show Conversation Starters

1. Air is all around us! What evidence is there that air is actually something that surrounds us?
2. What type of scientists study the weather?
3. Could you design an experiment that allows you to measure weather over time?

AIR-cabulary

Atmosphere - the envelope of gases surrounding the earth or another planet. Earth's atmosphere has 5 layers which are the troposphere, stratosphere, mesosphere, thermosphere and exosphere.

Air pressure - the force exerted onto a surface by the weight of the air. There is approximately 14.7 pounds of pressure per square inch at sea level.

Density - Density commonly is expressed in units of grams per milliliter and kilograms per liter and is defined as mass per unit volume. $D = M/V$

Mass - is the measurement of the amount of matter there is in an object. Mass of an object remains constant in all circumstances while weight varies due to gravity. Mass and is measured in grams (g) or kilograms (kg). Your mass on the earth and the moon are identical.

Lab Safety



Scan me to hear the song!

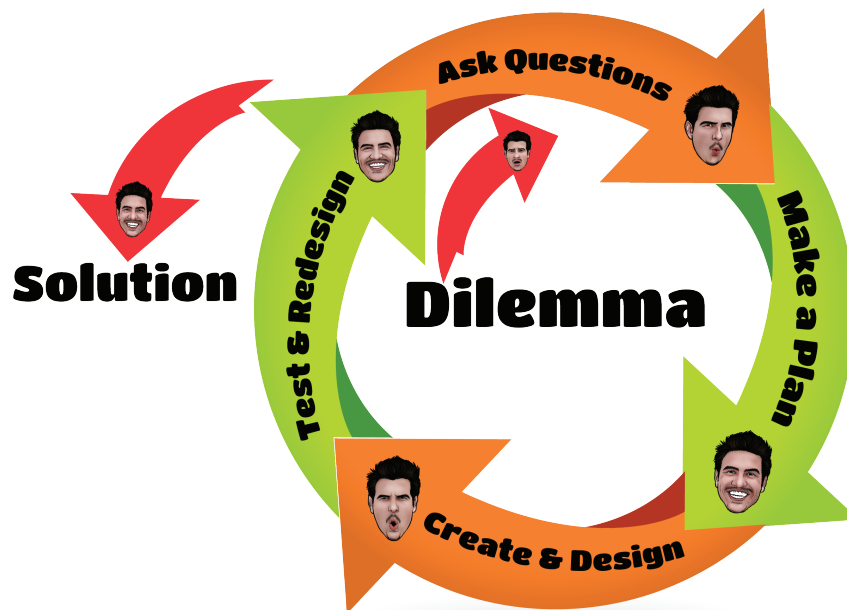
- Anytime you're doing science, it's important to remember Science Safety.
- Report all accidents, and breakage of glass or equipment to your instructor.
- Keep pathways clear by placing extra items (books, bags, etc.) on the shelves or under the work tables to avoid people tripping and falling or spilling materials.
- Long hair (chin-length or longer) must be tied back to avoid catching fire or dipping in chemicals.
- Leave your work-station clean and in good order before leaving the laboratory.
- Learn the location of the fire extinguisher, eye wash station, first aid kit, and safety shower.
- Walk calmly in the lab without running to avoid bumping into materials or one another.



Mister C

Engineering Design Process

THE ENGINEERING DESIGN PROCESS (EDP) is a flexible process that can include many variations. What makes the EDP unique is that engineers, and students, can begin anywhere in the process because the EDP is a cycle without a start and end point.



DILEMMA:

What is the identified problem? Have others approached it? How? What are your constraints?

ASK QUESTIONS:

What could be possible solution? Brainstorm ideas individually or with your team. Select one of your ideas.

MAKE A PLAN:

Draw your design and determine what materials will be needed to build your design.

CREATE & DESIGN:

Work to make your plan come to life.

TEST & REDESIGN:

What works? What doesn't? How can you improve your design. Make adjustments to your design and make it better. Then test it again.

FIND A SOLUTION:

Test, redesign and continue planning if needed until you find a solution.



DIY AIR CANNON

TOPIC: AIR

Air is EVERYWHERE! Air is the invisible gaseous substance surrounding the earth. Build an air cannon to experience the movement of air through a space.

MATERIALS

- Plastic or styrofoam cups
- Scissors
- Balloon
- Various items to knock over
- Clean work space and a parent helper

DIFFICULTY:



SCAN ME TO WATCH A VIDEO



FOLLOW ME
@ORIGINALMISTERC

Did you know that dolphins can create vortex rings to play with in the water by blowing air through their blowholes. The quick burst of air combined with the round shape of the blowhole create a vortex ring of bubbles.



EXPERIMENT:

Step 1: Gather materials.

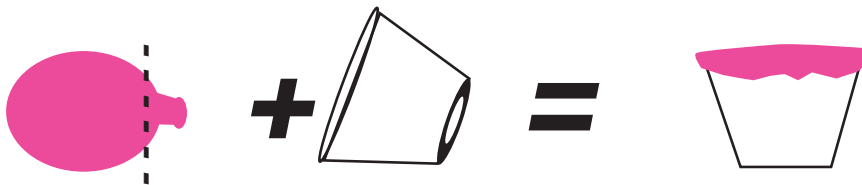
Step 2: Cut the neck off of the balloon and keep the large part.

Step 3: Carefully cut a hole in the bottom of the cup about the size of a dime with your scissors. You may need an adult to help for this step.

Step 4: Attach the cut balloon to the mouth of the cup. Be sure to stretch it tightly and reinforce by wrapping a rubber band around the lip of the cup.

Step 5: Pull back the balloon and let it go to force the air out of your cannon. You can also tap the balloon to fire the cannon.

Step 6: You can hang a strip of toilet paper from a door frame and test how far back you can stand and still hit the toilet paper with the air cannon.



WHY IT WORKS:

Although you can't see it, your cup is filled with air. When you apply a force to the air molecules by pulling back the balloon and letting it snapback, the air molecules are pushed toward the opening. This movement sets off a quick chain reaction of collisions with other air molecules and the sides of the cup. The only way for the air molecules to escape is through the opening at the bottom of the cup. The quick escape of these air molecules forms a stream of air that flows straight out of the cannon.

EXTEND YOUR LEARNING:

To make this a true experiment, try changing a variable?

What might happen if you used a different sized cup? Could you cut a 2 liter bottle to make a larger cannon? Could you try another stretchy material to take the place of the balloon?

Does it change the experiment if you make the hole a different shape? What if you place it in a different spot? Experiment with your air cannon to see what changes allow you to shoot air the furthest.

Have a target competition with a friend

WORKFORCE CONNECTION

A meteorologist studies interactions between temperature, humidity, air pressure, precipitation and vortices in the atmosphere. They develop an understanding of how vortices such as tornadoes, waterspouts and hurricanes form so they can predict the weather to keep people informed and safe. They also study and learn about the polar vortex and how it affects the weather during winter



FOLLOW ME
@ORIGINALMISTERC



DIY CAN CRUSH

TOPIC: AIR

Air is EVERYWHERE! Air is the invisible gaseous substance surrounding the earth. there are five layers to Earth's atmosphere and gravity is pulling down on the air molecules in each layer. That pulling creates atmospheric pressure.

MATERIALS

- Stove top or burner
- Water
- Empty soda cans
- Tongs
- Large bowl with ice
- Clean work space and a parent helper

DIFFICULTY:



FOLLOW ME
@ORIGINALMISTERC

Implode is the opposite of explode. When something implodes, like the can, it quickly collapses inward. Did you know people implode old buildings when they need to demolish them so the destruction doesn't hurt other buildings.



EXPERIMENT:

Step 1: You'll need parent help for this since you'll be using a stove top burner to heat water.

Step 2: Gather materials.

Step 3: Fill a large bowl $\frac{1}{2}$ way with cold water. Add several ice cubes.

Step 4: Add a quarter cup of water to the bottom of the can (just enough to cover the bottom).

Step 5: Place the can on the center of the burner. Once it's stable, turn the burner on high.

Step 6: Once you see steam coming out of the can, wait one additional minute.

Step 7: Use your tongs and grasp the bottom of the can (Make sure your palm is facing up. This will allow you to quickly flip the can into the ice water).

Step 8: Quickly flip the can over placing the opening into the ice water.

WHY IT WORKS:

So how'd that happen? The can was filled with water AND air! As the water in the can heats up, it changes from a liquid to a gas. We call this gas water vapor. The moving water vapor pushes the air out of the can. After you turn the can over into the water, it seals the can and traps the water vapor inside. The water vapor quickly cools and condenses. As the water vapor condenses back into water, it leaves empty space in the can. This empty space allows the air around the outside of the can push on the can and crushes it. The outside air is always there and exerts 14.7 pounds of pressure per square inch. But, it's not able to crush the can when there is air inside of the can. Once that air inside the can is removed, the outside air easily crushes the can. You may have noticed that the can started to fill up with water. This is a result of the low pressure inside the can and the air pushing down on the water in the bowl. The water gets pushed by the air into the can to fill the empty space.

EXTEND YOUR LEARNING:

You just completed the can crusher activity. To make this a true experiment, try changing a variable?

- What might happen if you add more water to the can?
- What if you don't add ice to the water?
- Does it change the experiment if we use a different kind of can or a water bottle?
- What if we change the water temperature in the bowl?
- Does the ice make a difference?

WORKFORCE CONNECTION

Aerospace engineers have to understand how pressure and a lack of pressure (vacuum) affect the performance of aircraft and spacecraft inside and outside of the earth's atmosphere. Aerospace engineers design and test aircraft and spacecraft as well as missiles and satellites to learn how air impacts flight.



FOLLOW ME
@ORIGINALMISTERC



DIY SOLAR BALLOON

TOPIC: AIR

Air is EVERYWHERE! Air is the invisible gaseous substance surrounding the earth. Build a Solar Balloon Kite to learn how heat energy changes how air behaves.

MATERIALS

- Cellophane packing tape
- Seven (7) 30 gallon thin, black trash bags
- Scissors
- String
- Clean work space and a parent helper

DIFFICULTY:



Make sure you don't fly your solar balloon kite near any airports and be sure to let your neighbors know what you are doing! We don't want any UFO calls being made to the authorities!



EXPERIMENT:

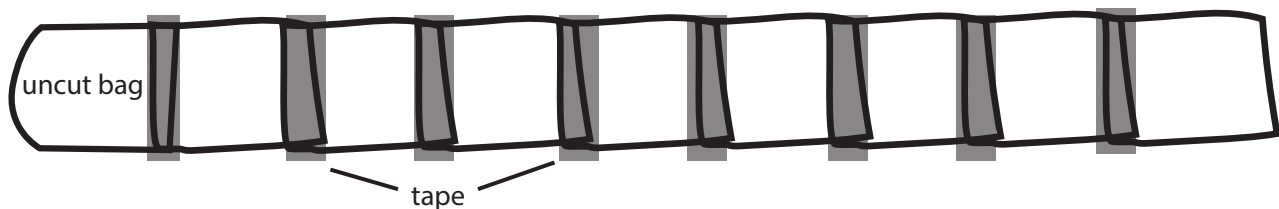
Step 1: Gather materials.

Step 2: Cut the bottoms off of 6 trash bags.

Step 3: Lay the uncut bag out first. Then lay 6 cut bags end-to-end starting at the top of the uncut bag. Be sure to tuck the bags into each other at least 1 inch so no air will be able to escape when you tape them together. This overlap prevents air from escaping.

Step 4: Connect the bags together by taping them to each other with tape. Carefully cover the seams all the way around the bag so no air can enter or escape.

Step 5: Repeat step 4 with the remaining bags and then connect them together in the middle. Make sure you are careful to tuck them in the same direction as the other segment so the air will flow in easily. Your kite should look like a giant segmented earthworm with one open side.



Step 6: Carefully inflate your balloon. Have a helper hold the closed end while you hold the open end to allow air to fill your balloon.

Step 7: Once inflated, tie a kite string to your DIY Solar Balloon Kite and allow it to be in direct sunlight.

WHY IT WORKS:

The black color of the trash bags absorbs heat energy from the sun and the air inside the bags to heat up. As air molecules gain more energy, they spread out quickly and create more space between them. Because the air molecules inside are spreading out, they become less dense than the cooler air around the solar balloon kite. This allows the solar balloon kite to rise and float in the air. This is similar to a beach ball rising to the top of the pool water because the air inside is less dense than the surrounding water.

EXTEND YOUR LEARNING:

- Would the solar balloon kite work if you used white trash bags?
- Would it work with one trash bag?
- Does the solar balloon kite work better in the morning, in the middle of the day, or in the evening?
- Does it work on a cloudy day?

WORKFORCE CONNECTION

An airship pilot flies giant airships. The airships only fly about 30 miles per hour, but are extremely sensitive to the wind just like the solar balloon. Pilots need strong flying skills to respond to the slightest changes in the weather. In addition, Airships have to land into a group of people who rush to secure them to the ground, so expert piloting skills are necessary for safety. Even professional pilots need at least a year of additional training to fly a helium filled airship.



FOLLOW ME
@ORIGINALMISTERC

K-5 Student to Family Cooperative Activity Ideas:

- Create a home theater space: Dedicate a specific area in your home as a temporary theater space. It can be anywhere with a little bit of space to "put on a show". Create a cozy ambiance with lighting and comfortable seating.
- Create tickets and programs: Design and print them at home or even hand made. Deliver the tickets to family members, and the programs can include information about the performance, cast, and crew. This adds a touch of authenticity and excitement.
- Snack bar and concessions: Set up a snack bar or concessions stand with a variety of treats and refreshments. You can even create special themed snacks related to the performance you are watching.
- Interactive viewing experience: Encourage audience participation during the performance. For example, during a musical, you can sing along to the songs and clap during applause-worthy moments!
- Post-show discussions: After the performance, have a family discussion about the show. Share your thoughts, favorite moments, and discuss the themes or lessons portrayed. This can foster critical thinking and encourage creativity in your kids.
- **Remember, the goal is to create a memorable and immersive experience. Adapt these ideas based on your family's preferences and the resources available to you. The key is to have fun and enjoy the theater experience in your digs!**

Additional Activity Ideas:



- Memory jars: Create a memory jar with your children. Write down favorite childhood memories on small pieces of paper and put them in a jar. Each week or month, take turns pulling out a memory and sharing it. This can spark conversations and lead to further discussions about your childhood experiences, and theirs too!
- Bedtime stories: Instead of reading traditional bedtime stories, take turns sharing personal stories from your childhood. These could be tales of adventure, funny incidents, or heartwarming experiences. This can create a strong bond between you and your children as you share personal narratives.
- Encourage your kids to create their own journals or scrapbooks to document their childhood memories. Take the opportunity to share your childhood stories as you help them with their own projects. You can even contribute by adding some of your own stories or mementos to their journals.
- What was your favorite song, band or genre growing up? Play a few songs for your child/children and let them play a few of their favorites for you!
- Create traditions with your child/children!: Establish special rituals or traditions that you can share. It could be a weekly movie night, cooking together on weekends, going for a walk after dinner, or singing at the top of your lungs before bedtime.

Standards Alignment: Mister C Live! Air Is Everywhere

Standards Alignment: The activities in this guide are aligned with the standards listed below. When teachers incorporate the arts, they increase student engagement, offer multiple points for students to access the curriculum, and provide alternate means for students to demonstrate what they know.

Florida's Benchmarks for Excellent Student Thinking (B.E.S.T.)	
Kindergarten through Grade 12/ English Language Arts	
ELA.K.12.EE.1.1	Cite evidence to explain and justify reasoning.
ELA.K.12.EE.2.1	Read and comprehend grade-level complex texts proficiently.
ELA.K.12.EE.3.1	Make inferences to support comprehension.
ELA.K.12.EE.4.1	Use appropriate collaborative techniques and active listening skills when engaging in discussions in a variety of situations.
ELA.K.12.EE.5.1	Use the accepted rules governing a specific format to create quality work.
ELA.K.12.EE.6.1	Use appropriate voice and tone when speaking or writing.
Theatre K-12	
TH.2.C.3.1	Identify important characteristics to discuss when sharing opinions about theatre.
TH.5.H.2.1	Recognize theatre works as a reflection of societal beliefs and values.
Science	
SC.2.E.7.4	Investigate that air is all around us and that moving air is wind.
SC.3.P.8.2	Measure and compare the mass and volume of solids and liquids.
SC.5.E.7.3	Recognize how air temperature, barometric pressure, humidity, wind speed and direction, and precipitation determine the weather in a particular place and time.



My Theater Review

I saw: _____

Reviewed by: _____

This play/musical was about...

Here's a drawing of
my favorite character:

It made me feel:

I learned:

I gave this play/musical stars.



**We'd love to hear from you! If you'd like to submit this review,
please send to jenriquez@browardcenter.org**